



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,103	11/19/2001	John Frederick Graf	RD-29408	8648

6147 7590 05/22/2003

GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH CENTER  
PATENT DOCKET RM. 4A59  
PO BOX 8, BLDG. K-1 ROSS  
NISKAYUNA, NY 12309

EXAMINER

GEISEL, KARA E

ART UNIT PAPER NUMBER

2877

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/683,103

Applicant(s)

GRAF ET AL.

Examiner

Kara E Geisel

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-8,21-23,25-41,43 and 56-59 is/are allowed.
- 6) ☒ Claim(s) 9-15,24,42 and 44-50 is/are rejected.
- 7) ☒ Claim(s) 16-20, 51-55 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Information Disclosure Statement*

The information disclosure statement filed on January 7<sup>th</sup>, 2002 has been fully considered by the examiner.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 24 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 recites the limitation "the optical parameters" in line 1. There is insufficient antecedent basis for this limitation in the claim.

In regards to claim 42, it is unclear what other optical parameters applicant is referring to when it is stated "and optical parameters". Clarification is required.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Art Unit: 2877

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 9-15 and 44-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerber (USPN 5,003,500) in view of Hasegawa et al. (USPN 4,042,469).

In regards to claim 9, Gerber discloses a method for determining a color formula that matches a color of a color standard (column 1, lines 8-12) comprising receiving a sample of the color standard (column 4, lines 9-15), measuring the color of the color standard (column 4, lines 35-44), and determining a color formula that produces the measured color (column 5-6, lines 46-68 and 1-6, respectively). While Gerber does not disclose that the color formula would satisfy accelerated weathering test requirements, it is a very well known desire in the art for the color of an item to maintain it's integrity through exposure to weather. It would be obvious to one of ordinary skill to keep calculating formulas until one satisfied the accelerated weathering test requirements.

For example, Hasegawa discloses a colored aluminum or alloy thereof (column 1, lines 7-10). Previous processes to color the alloys displayed low weather resistance (column 1, lines 23-26). Hasegawa discloses a method of coloring the alloy that improves its weather resistance and satisfies accelerated weathering test requirements (column 3, lines 61-68; column 4, lines 23-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate a formula in Gerber's invention that would pass accelerated test requirements.

In regards to claim 10, the determining of a color formula comprises producing colorant characterization batches (column 5, lines 32-68).

In regards to claim 11, the method further comprises measuring the color of the colorant characterization batches (columns 5-6, lines 64-68 and 1-6, respectively).

Art Unit: 2877

In regards to claim 12, the method further comprises applying a light scattering model to determine the optical parameters of the colorant characterization batches (column 5, lines 9-31).

In regards to claim 13, the method further comprises using optical parameters and the measured color of the color standard with the light scattering model to determine a color formula that matches the color standard (column 5, lines 9-31 and 33-47).

In regards to claim 14, it is well known in the art to submit the batches to an accelerated weathering test that exposes the batches to various weathering conditions in order to make sure the batch satisfies accelerated weathering test requirements (see Hasegawa columns 3-4, lines 61-68 and 1-5, respectively).

In regards to claim 15, it is well known in the art to test the color of the batches after being submitted to the weathering test in order to make sure the batch satisfies accelerated weathering test requirements.

In regards to claim 44, Gerber discloses a computer-readable medium storing computer instructions for instructing a computer system (column 4, lines 54-64) to determine a color formula that matches a color of a color standard (column 1, lines 8-12) comprising receiving a sample of the color standard (column 4, lines 9-15), measuring the color of the color standard (column 4, lines 35-44), and determining a color formula that produces the measured color (column 5-6, lines 46-68 and 1-6, respectively). While Gerber does not disclose that the color formula would satisfy accelerated weathering test requirements, it is a very well known desire in the art for the color of an item to maintain its integrity through exposure to weather. It would be obvious to one of ordinary skill to keep calculating formulas until one satisfied the accelerated weathering test requirements.

For example, Hasegawa discloses a colored aluminum or alloy thereof (column 1, lines 7-10). Previous processes to color the alloys displayed low weather resistance (column 1, lines 23-26). Hasegawa discloses a method of coloring the alloy that improves its weather resistance and satisfies

Art Unit: 2877

accelerated weathering test requirements (column 3, lines 61-68; column 4, lines 23-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to calculate a formula in Gerber's invention that would pass accelerated test requirements.

In regards to claim 45, the determining of a color formula comprises instructions for producing colorant characterization batches (column 5, lines 32-68).

In regards to claim 46, the instructions further comprising measuring the color of the colorant characterization batches (columns 5-6, lines 64-68 and 1-6, respectively).

In regards to claim 47, the instructions further comprising applying a light scattering model to determine the optical parameters of the colorant characterization batches (column 5, lines 9-31).

In regards to claim 48, the instructions further comprising using optical parameters and the measured color of the color standard with the light scattering model to determine a color formula that matches the color standard (column 5, lines 9-31 and 33-47).

In regards to claim 49, it is well known in the art to have instructions for submitting the batches to an accelerated weathering test that exposes the batches to various weathering conditions in order to make sure the batch satisfies accelerated weathering test requirements (see Hasegawa columns 3-4, lines 61-68 and 1-5, respectively).

In regards to claim 50, it is well known in the art to have instructions to measure the color of the batches after being submitted to the weathering test in order to make sure the batch satisfies accelerated weathering test requirements.

***Allowable Subject Matter***

Claims 1-8, 21-23, 25-41, 43, and 56-59 are allowed.

Claims 16-20 and 51-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2877

Claims 24 and 42 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter:

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for predicting the color of a color standard exposed to weathering conditions comprising predicting the color of the standard from concentration of the colorants in the color standard and weathered optical parameters, in combination with the rest of the limitations of claim 1.

As to claim 6, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for predicting the shift in color of a color standard exposed to weathering conditions comprising applying a light scatter model to weathered optical parameters and colorant concentrations to determine a weathered color for the standard and predicting the shift in color of the color standard from the weathered color, in combination with the rest of the limitations of claim 6.

As to claim 16, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for determining a color formula that matches a color of a color standard and satisfies accelerated weathering test requirements comprising applying a light scattering model to the weathered colorant characterization batches to determine weathered optical parameters of the batches, in combination with the rest of the limitations of claim 16.

As to claim 21, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method for predicting the shift in color of a color standard exposed to weathering conditions comprising applying a light scatter model to weathered optical parameters and colorant concentrations to determine a weathered color for the standard and predicting the shift in color of the color standard upon exposure to weathering conditions from the weathered color, in combination with the rest of the limitations of claim 21.

As to claim 25, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system for predicting the color of a standard exposed to weathering conditions comprising means for applying a light scatter model to weathered optical parameters and colorant concentrations to determine a weathered color for the standard and means for predicting the shift in color of the color standard upon exposure to weathering conditions from the weathered color, in combination with the rest of the limitations of claim 25.

As to claim 29, the prior art of record, taken alone or in combination, fails to disclose or render obvious a system for determining a color formula that matches a color of a color standard and satisfies accelerated weathering test requirements comprising a color database containing weathered optical parameters associated with each of a plurality of colorants, in combination with the rest of the limitations of claim 29.

As to claim 33, the prior art of record, taken alone or in combination, fails to disclose or render obvious a color formulation tool comprising a color prediction component which predicts a shift in color for the color formula due to weathering, in combination with the rest of the limitations of claim 33.

As to claim 36, the prior art of record, taken alone or in combination, fails to disclose or render obvious a computer-readable medium storing computer instructions for instructing a computer system to predict the color of a color standard exposed to weathering, the instructions comprising predicting the color of the color standard from a concentration of the colorants in the color standard and weathered optical parameters, in combination with the rest of the limitations of claim 36.

As to claim 41, the prior art of record, taken alone or in combination, fails to disclose or render obvious a computer-readable medium storing computer instructions for instructing a computer system to predict the color shift of a color standard exposed to weathering, the instructions comprising applying a light scatter model to weathered optical parameters and colorant concentrations to determine the

Art Unit: 2877

weathered color for the standard, and predicting the color shift of the color standard upon exposure to weathering from the weathered color, in combination with the rest of the limitations of claim 41.

As to claim 51, the prior art of record, taken alone or in combination, fails to disclose or render obvious a computer-readable medium storing computer instructions for instructing a computer system to determine a color formula that matches a color of a color standard and satisfies accelerated weathering test requirements comprising further instructions for applying a light scattering model to the weathered colorant characterization batches to determine weathered optical parameters of the batches, in combination with the rest of the limitations of claim 16.

As to claim 56, the prior art of record, taken alone or in combination, fails to disclose or render obvious a computer-readable medium storing computer instructions for instructing a computer system to predict the color shift of a color standard exposed to weathering, the instructions comprising applying a light scatter model to weathered optical parameters and colorant concentrations to determine the weathered color for the standard, and predicting the color shift of the color standard upon exposure to weathering from the weathered color, in combination with the rest of the limitations of claim 56.

#### *Additional Prior Art*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art made of record is Lacatus et al. (USPN 4,728,677), Koehler (USPN 4,887,906), Yoshida et al. (USPN 4,931,655), Weston (USPN 4,968,143), and Lin (USPN 5,304,807).

Lacatus discloses a vinyl polymer coating that is tested in an accelerated weathering test in order to determine the resistance to fading. The test is done for increasing amounts of time, and the change of color is measured after each test to make sure that the polymer satisfies accelerated weathering test requirements.

Koehler discloses a spectrophotometer used to measure a color standard, and the measurement is sent to a computer so that a color formula of the color standard can be obtained.

Art Unit: 2877

Yoshida discloses a device for testing materials by accelerated weathering tests.

Weston discloses a spectrophotometer for measuring paint color of a color standard and determining the match of the color standard even after weathering has occurred.

Lin discloses a method for determining the current state of a distillate fuel by measuring the color of the fuel, and by using a formula, determining the degradation of the fuel over time.

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is 703 305 7182. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 703 308 4881. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9318 for regular communications and 703 872 9319 for After Final communications. For inquiries of a general nature, the Customer Service fax number is 703 872 9317.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 1782.



F.L. Evans  
Primary Examiner  
Art Unit 2877

K.G.  
KEG  
May 13, 2003